

Serial No. 10/781,786

Docket No.: 300.1145

IN THE SPECIFICATION:

The specification as amended below with replacement paragraphs shows added text with underlining and deleted text with ~~striketrough~~.

Please REPLACE the paragraph beginning at page 1, lines 13, 19, 23, and 25, with the following paragraph:

1. Field of the Invention

The present invention relates to a semiconductor device having external contact terminals and a method for using the same and, particularly to a semiconductor device having external terminals, such as a semiconductor socket having a number of springy external contact pins or terminals of a micro-spring system, which are used while being ~~in~~ brought into contact with pads or solder balls of an interposer or a connector board.

2. Description of the Related Art

In the prior art, in a semiconductor device having a number of springy external contact pins or terminals of a micro-spring type, used as a test probe or ~~others~~otherwise, the external contact pin or terminal is made, for example, of a gold (Au) wire for ~~the bonding~~, which surface is plated with palladium (Pd), indium (in) or others. In such a semiconductor device, while the contact terminals repeat ~~the making~~ contact with pads or solder balls on an interposer or a connector board several hundreds or thousands times, a surface of the terminal may be become contaminated or adhered with dirt or solder transferred from the mating object, which increases the electric contact resistance of the external terminal, causing a problem particularly in a high-frequency probe pin in that a test signal is not accurately transmitted even if the adhered solder is slight in amount.

Please REPLACE the paragraph beginning at page 6, line 30 and 31, with the following paragraph:

Then, although not shown, at least the tip portions of a number of micro-springs 20 are dipped into a plating bath to be subjected to the plating process. As described later, a nickel film or a nickel alloy film is initially formed, and then a gold film and a palladium film are alternately i.e., successively, laminated thereon by the plating process. Or a gold film and an indium film may be alternately i.e., successively, laminated on the nickel film or the nickel alloy film.

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Please REPLACE the paragraph beginning at page 8, line 1, with the following paragraph:

Accordingly, when the package 50 is mounted to the guide portion 42 of the package guide 40 and pushed and fixed by a pressing jig 54, the tip ends of the micro-springs 20 of the support board 10 are brought into contact with the respective external connecting terminals 52 of the package 50. At this time, in the same manner as described before, as the micro-springs 20 are formed of springy metallic wire, the micro-springs 20 are brought into contact with the external connecting terminals 52 while being subjected to the elastic deformation. In one example, the "deformation" of the tip end of the micro-spring 20 when it is in contact with the pad 31 or the terminal 52, that is, a "pressed amount", may be 50 μ m or more. Also, the contact resistance may be 0.1 Ω or less.

Please REPLACE the paragraph beginning at page 10, line 28, with the following paragraph:

Also in this embodiment, the micro-spring 20 itself may be formed by using the wire-bonding method of gold wire in the same manner as in the preceding embodiment. ~~In~~ On the tip end of the micro-spring 20 exposed out of the elastomeric layer 27, the surface of the gold wire material 21 is covered with the nickel or nickel alloy film 22 formed by the plating, on which the gold film 23 and the palladium film (or indium film) 24 are alternately laminated by the plating as described before. In this regard, a portion to be plated may be a whole micro-spring 20 or solely the tip end thereof exposed out of the elastomeric layer 27.